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The carbohydrate at FcgammaRIIIa Asn-162. An element required for high affinity binding to non-fucosylated IgG glycoforms.
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3: Schuster M, Umana P, Ferrara C, Brunker P, Gerdes C, Waxenecker G, Wiederkum S, Schwager C, Loibner H, Himmler G, Mudde GC. Related Articles, Links

Improved effector functions of a therapeutic monoclonal Lewis Y-specific antibody by glycoform engineering.
Cancer Res. 2005 Sep 1;65(17):7934-41.
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Gene Ther. 2003 Sep;10(18):1616-22.
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5: Lowenstein PR, Thomas CE, Umana P, Gerdes CA, Verakis T, Boyer O, Tondeur S, Klatzmann D, Castro MG. Related Articles, Links

High-capacity, helper-dependent, "gutless" adenoviral vectors for gene transfer into brain.
Methods Enzymol. 2002;346:292-311. No abstract available.
PMID: 11883074 [PubMed - indexed for MEDLINE]

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Modulation of therapeutic antibody effector functions by glycosylation engineering: influence of Golgi enzyme localization domain and co-expression of heterologous beta1, 4-N-acetylglucosaminyltransferase III and Golgi alpha-mannosidase II.

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The effector functions elicited by IgG antibodies strongly depend on the carbohydrate moiety linked to the Fc region of the protein. Therefore several approaches have been developed to rationally manipulate these glycans and improve the biological functions of the antibody. Overexpression of recombinant beta1,4-N-acetylglucosaminyltransferase III (GnT-III) in production cell lines leads to antibodies enriched in bisected oligosaccharides. Moreover, GnT-III overexpression leads to increases in non-fucosylated and hybrid oligosaccharides. Such antibody glycovariants have increased antibody-dependent cellular cytotoxicity (ADCC). To explore a further variable besides overexpression of GnT-III, we exchanged the localization domain of GnT-III with that of other Golgi-resident enzymes. Our results indicate that chimeric GnT-III can compete even more efficiently against the endogenous core alpha1,6-fucosyltransferase (alpha1,6-FucT) and Golgi alpha-mannosidase II (ManII) leading to higher proportions of bisected non-fucosylated hybrid glycans ("Glyco-1" antibody). The co-expression of GnT-III and ManII led to a similar degree of non-fucosylation as that obtained for Glyco-1, but the majority of the oligosaccharides linked to this antibody ("Glyco-2") are of the complex type. These glycovariants feature strongly increased ADCC activity compared to the unmodified antibody, while Glyco-1 (hybrid-rich) features reduced complement-dependent cytotoxicity (CDC) compared to Glyco-2 or unmodified antibody. We show that apart from GnT-III overexpression, engineering of GnT-III localization is a versatile tool to modulate the biological activities of antibodies relevant for their therapeutic application. (c) 2006 Wiley Periodicals, Inc.